

WHAT IS CLAIMED IS:

1. A magnetic alloy comprising Pt in an amount of 40 at% to 60 at%, and at least two 3d transition metal elements, wherein the total amount of the 3d transition metal elements is from 60 at% to 40 at%, and the average number of valence electrons in the respective 3d transition metal elements as calculated on the basis of the compositional proportions of the elements is from 7.5 to 9.

2. A magnetic alloy according to claim 1, which has an order parameter (S) of 0.5 to 1 as calculated from the following formula:

$$S = [\{F(002)^2/F(001)^2\} \times \{L(002)/L(001)\} \times \{A(002)/A(001)\} \times \{I(001)/I(002)\}]^{1/2}$$

wherein F(plane direction), L(plane direction), A(plane direction), and I(plane direction) represent the structure factor, Lorentz factor, absorption factor, and integration intensity as measured through X-ray diffractometry ($\theta/2\theta$) of the magnetic alloy in the corresponding plane direction, respectively.

3. A magnetic alloy according to claim 1 or 2, which has a magnetic anisotropy constant (Ku) of 8×10^5 J/K to 2×10^7 J/K.

4. A magnetic recording medium comprising a substrate, a soft magnetic layer, a perpendicular magnetic layer, and a protective layer, the layers being provided atop the substrate, wherein the perpendicular magnetic

layer contains a magnetic alloy as recited in claim 1 or 2.

5. A magnetic recording and reproducing apparatus comprising a magnetic recording medium as recited in claim 4, and a magnetic head for recording of data onto the medium and for reproduction of the data therefrom.